WEST

Freeform Search

Database:
US Patents Full-Text Database
US Pre-Grant Publication Full-Text Database
JPO Abstracts Database
EPO Abstracts Database
Derwent World Patents Index
IBM Technical Disclosure Bulletins

Term: 5056109.pn.

Display: 62 **Documents in Display Format:** CIT **Starting with Number** 1

Generate: ○ Hit List ◉ Hit Count ○ Image

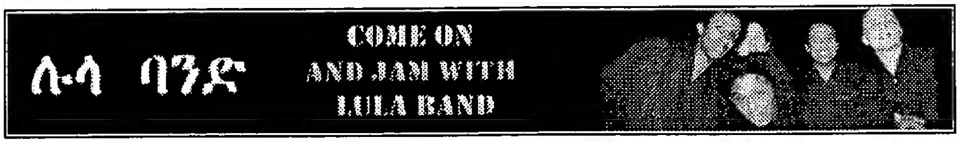
Search | Clear | Help | Logout | Interrupt

Main Menu | Show S Numbers | Edit S Numbers | Preferences

Search History

Today's Date: 5/23/2001

DB Name	Query	Hit Count	Set Name
USPT,JPAB,EPAB,DWPI,TDBD	5056109.pn.	3	L6
USPT,JPAB,EPAB,DWPI,TDBD	((mobile or remot$) same (Power near3 control)) and (aloha) and ((cdma) or (code$ adj division adj multiple adj access$3))	29	L5
USPT,JPAB,EPAB,DWPI,TDBD	(Power near3 control) and (aloha) and ((cdma) or (code$ adj division adj multiple adj access$3))	53	L4
USPT,JPAB,EPAB,DWPI,TDBD	(Power near3 control) same (aloha) same ((cdma) or (code$ adj division adj multiple adj access$3))	1	L3
USPT,JPAB,EPAB,DWPI,TDBD	(5280472)![pn]	3	L2
USPT,JPAB,EPAB,DWPI,TDBD	(Power near2 control) same (aloha) same ((cdma) or (code$ adj division adj multiple adj access$3))	1	L1



Wednesday, May 23, 2001 | News.Asmarino.Com

COMMENTS

THE BERLIN GROUP (G13) VINDICATED

By KN
May 23, 2001

Eight months after the historic Berlin Letter and its courageous authors exposed Eritrea's lonely dictator to his true colour, revolutionary ideas are slowly but surely emerging in the web site (DEHAI) that poured much ink at that time to tarnish the names of the G13 and to discredit their reputation and integrity, and was directly involved in leaking the Letter to the public. According to the post attached below, it takes only a Christmas travel to Eritrea to find out that all the issues that have been addressed in the Berlin Letter are substantiated by the facts on Eritrean soil, and that all the sycophants who have been pouring much ink to defame the participants of the historic Berlin Meeting are empty souls totally detached from Eritrean reality.

The author of the attached post (Mr. TZ, [abbreviation mine]) is a member of the Dehai Forum (a Club dominated by a handful of infantile sycophants only dedicated to our dictator, and not to the interests of the Eritrean people). By his own admission, he was one of those Dehaiers who "mercilessly" attacked the G13 for telling truth to power. Now, after a short Christmas visit to Eritrea, he came back enlightened by the facts on Eritrean soil and is telling Dehai that the issues addressed in the Berlin Letter should now be "revisited." I would like to commend him for his hindsight wisdom, and for his courage to vindicate and rehabilitate the fearless G13. His post is a huge blow not only to Dehai, but also to all individuals of our web sites who spared no ink to publicly discredit and insult the Berlin Group.

On February 13, a high ranking Eritrean intellectual by the name Ghebrehiwet Tesfagiorgis, posted pages after pages to Asmarino and Dehai to defend the indefensible Eritrean dictator and, on his way, to belittle the contents of the Berlin Letter. If Mr. Ghebrehiwet has any trace of intellectual integrity left, after reading the attached post below, he should come out and demonstrate that integrity by publicly apologising to the G13. And what about Ms. Luula Ghebreyesus? Well, I am better advised not to lose a word on a fead-ridden lady who cannot stand for truth and principles. The remaining G12 will do a far better job without her.

And to those Dehaiers (for example a certain infant by the name Hanna Kifle) who are currently engaged in a shameful campaign of character assassination to tarnish the images of the Great Men and Women of the G13, my parting word of advice is: Give it up because you are barking from a lost ground! Like Dr. Bereket said it in one of his posts to Asmarino, NONE of the ink you have been pouring will tarnish the reputation of the group and erase the truth expressed in the historic Berlin Document. Eight months after the publication of the Berlin Letter, even the most blinded souls of Dehai seem to open their eyes and to swallow the truth. And

that is a major achievement by itself. Mr. TZ, thank you for your integrity and your very enlightening comment, and may your post be an omen to other still blinded Dehaiers to finally accept the truth so that we can collectively move ahead on the road paved by the courageous G13 to liberate Eritrea from the hands of its lonely dictator who excels neither in military strategy nor in political and diplomatic skills.

HAPPY INDEPENDENCE DAY ERITREA !!!

Best Regards,
KN

PS.: I am not a Dehai member. But a friend of mine who is a Dehai member, surprised by the integrity of the author, shared the post with me. I hope my friend will forgive me for sharing the post with the readers of Asmarino.com and Awate.com.

---

selam all,

People's satisfaction or lack of it is the best barometer by which one can gauge a government's performance. Our people are not used to criticise the government; in fact, there is a dangerous precedent of labelling those who dared to criticise as not only anti-government but anti-Eritrea as well.

There could be many reasons for that. Few that come to mind are the fact that we still feel indebted to the people who led us to liberation; another is a feeling of belongingness either to the government or to the self acclaimed opposition groups which, IMHO, is a projection of the armed struggle in Eritrea. It is high time that we realised one can criticise the government and means well for the country we call home - Eritrea. That, in my book, is called a constructive criticism. On the two ends of the spectrum, we find those who work tirelessly to discredit the government and would go as far as collaborating with the enemy of the state (making the minority), and those who think it is a sin to question the governments performance. Those who lie in the middle are the ones with little noise, if at all.

To get back to the question, let's look at how people inside Eritrea feel about our government today. After all those are the true judges of how well or how badly the GOE is doing. In his last interview with Ere TV, president Isayas said the dissatisfaction among our people is attributed to the bitterness caused by the third woyane offensive, and perhaps by exaggerating few wrong doings by people in authority way out of proportion, or something to that effect. I can agree with that statement to some extent, but what exactly are people complaining about? I have been to Eritrea over the Christmas period; the following are few complaints I have come across.

1- The popular complaint is the way our military commanders are treating the younger members of EDF - the warsay. There are, I have learned, many cases of commanders using the warsay for their private gain. Some have used them as a free labour to build their own houses. Some used to own bars around Zalambesa which were actually run by the warsay. There are other cases of the commanders taking advantage of the women in service. Some of the stories are disturbing. You

may shrug them off as a hearsay. But, I see no other way of making the voices of those suffering heard.

2- The other area where you sense a lot of dissatisfaction is the middle management. Slowly but surely, if not checked, we seem to be going to the derg era in the department of civil Service. One can see the red tape at work. There seems to be no clear policy in the housing department, for example, to mention but one. Even if you have a court ruling in your favour, it seems the authorities in the housing department can actually refuse to give you a lease. This, from the surface, might actually seem another misunderstanding between the court and the housing department, but the cases are too many to the dismay of the people in the court itself.

3- I could go on with the list of complaints, but let me just mention the University of Asmara and its president Dr. Woldeab. This is a man who is literally a control freak. Some wonder to what extent his power stretches. He controls almost every thing in the institution up to the details of expenses as low as 100 Nfa. There are cases when the University was virtually at a stand still when he leaves abroad as he often does. There are cases where scholarships have expired, as there was no one who could sign for a student to leave during the president?s stay abroad. But, more worrisome is his tactics of silencing his critics. He/She who dares to criticise the man during meetings is automatically demoted from their positions.

These are only few examples but certainly not isolated cases to ignore. If I am to sum it up, lack of accountability is the key word. This should be read in the spirit that it is written, it is not meant to paint a gloomy picture rather is a genuine concern to address the problems facing young Eritrea. The G13 have demanded for transparency and accountability and were battered here in dehai for that. I will also take the blame for questioning their integrity due to their timing. Some of the points they raised, however, are very important and timely and should be revisited. They are more attached to the eritrean reality than I thought. In fact, you will find they have more support in Eritrea than in diaspora. Perhaps it is those of us who mercilessly hammered them that are detached. The moral of the story is that there is no sin in demanding accountability and transparency. In fact, the sin is failing to contribute towards making Eritrea a better place for everyone by being silent.

TZ

KN, who is solely responsible for the contents of this page, contributes the above commentary. For any comments, the writer can be contacted by e-mail: KN

WEST

Generate Collection

L5: Entry 8 of 29 File: USPT Sep 5, 2000

DOCUMENT-IDENTIFIER: US 6115390 A
TITLE: Bandwidth reservation and collision resolution method for multiple access communication networks where remote hosts send reservation requests to a base station for randomly chosen minislots

BSPR:
Wireless communications networks have the advantage of being able to extend the reach of wired networks. However, achievable bandwidths in wireless networks frequently lag behind those available in wired networks. Wired broadband systems like asynchronous transfer mode (ATM) are capable of providing services with different QoS (e.g., constant bit rate (CBR), variable bit rate (VBR), and available bit rate (ABR)) for enhanced support of multimedia applications. It is desired to extend such services to wireless networks. Research on merging ATM and wireless networks is therefore currently underway in many institutions and research laboratories. Many fundamental issues, affecting everything from the access layer to the transport layer, are being studied. Besides use of ATM as a transmission format at the air interface of a wireless network, ATM is also being considered for the wired infrastructure of cellular systems. Such a wired ATM infrastructure would be capable of supporting multiple access air interface technologies (e.g., CDMA, TDMA, etc.).

BSPR:
In a wireless network that supports multimedia traffic, an efficient channel access protocol needs to be maximize the utilization of the limited wireless spectrum while still supporting the quality of service requirements of all traffic. Several well-known channel access protocols are currently used in wireless data systems, such as Slotted Aloha, PRMA, etc. Slotted Aloha is a simple protocol but, because it does not attempt to avoid or resolve collisions between data users, its theoretical capacity is just 0.37. In addition, Slotted Aloha is unsuitable for efficient transmission of variable-length packets.

DEPR:
Some control messages are preferably part of the broadcast message 360, which may include such things as load metric, information about reservation minislots, flow control information, acknowledgments, and power management parameters. The load metric information can be as simple as the number of remote nodes registered with the AP, or may be more sophisticated, such as the equivalent number of active remote nodes. The load metric can be used for admission control and load-balancing among APs. The minislots information describes the number of reservation minislots present in the next uplink frame, if any, and their locations. The flow control information contains the connection cookie (identity) and an Xon/Xoff indication.

DEPR:
As illustrated in FIG. 17, the uplink power level for data transmission between the base station and several remote hosts in a wireless network employing ODMAFQ may be established during the initial access request message of the remote host. The method used is similar to that used for Code Division Multiple Access (CDMA) International Standard IS95 Channel Power Control. If the uplink transmission power level between a particular remote host and the AP has been stored at a previous time 1710, the stored level is used for uplink data transmission 1715. Otherwise, the remote host first transmits a short connection request message at an initial power level that is set relative to the nominal open loop power level 1720. If the remote host's first transmission is unsuccessful and therefore no acknowledgment is received 1730 from the AP, the power level is incremented by a power increment amount which may be predetermined 1740, the connection request is renewed at the new power level 1750, and the steps of transmitting and incrementing are repeated until the transmission is successful. The power level at which transmission is finally successful is then stored 1735 and used for

further data transmission 1715 between that remote host and the base station.

ORPL:
Qing Guo et al., "Sliding Frame R-Aloha (SFRA) Protocol For Microcellular Systems", Gateway To The Future-Technology In Motion, 41st Vehicular Technology Conference, May 19-22, 1991, pp. 351-356.

ORPL:
CDMA Access Channel Power Control, International Standard IS95, pp. 6-106-6-112.

WEST

Generate Collection

L5: Entry 6 of 29 File: USPT Dec 19, 2000

DOCUMENT-IDENTIFIER: US 6163533 A
TITLE: Random access in a mobile telecommunications system

BSPR:
In a Spread Spectrum Slot Reservation Multiple Access (SS-SRMA) System, a slotted ALOHA (S-ALOHA) random access scheme is used. At the beginning of a slot, a mobile station will send a random access packet to the base station and then await an acknowledgment from the base station that the packet was received. This S-ALOHA scheme dispenses with a number of steps that characterize the CODIT and IS-95 random access schemes (namely, power ramping and power control).

BSPR:
More specifically, in a CODIT-based Code Division Multiple Access (CDMA) system, a mobile station will attempt to access the base station receiver by using a "power ramping" process that increases the power level of each successive transmitted preamble symbol. As soon as an access request preamble is detected, the base station activates a closed loop power control circuit, which functions to control the mobile station's transmitted power level in order to keep the received signal power from the mobile station at a desired level. The mobile station then transmits its specific access request data. The base station's receiver "despreads" the received (spread spectrum) signals using a matched filter, and diversity-combines the despread signals to take advantage of antenna diversity.

BSPR:
In an IS-95 CDMA system, a similar random access technique is used. However, the primary difference between the CODIT and IS-95 process is that the IS-95 mobile station transmits a complete random access packet instead of just the preamble. If the base station does not acknowledge the access request, the IS-95 mobile station re-transmits the access request packet at a higher power level. This process continues until the base station acknowledges the access request.

BSPR:
In a mobile communications system using an S-ALOHA random access scheme, such as the method disclosed in the above-described U.S. patent application Ser. No. 08/733,501 (hereinafter, "the '501 Application"), a mobile station generates and transmits a random access packet. A diagram that illustrates a frame structure for such a random access packet is shown in FIG. 1. The random access packet ("access request data frame") comprises a preamble and a data field portion. The preamble contains a unique signature (bit) pattern, which is "L" symbols long. The signature pattern is randomly selected from a set of patterns that are, but not necessarily, orthogonal to each other. As such, the use of this unique signature pattern feature, as described and claimed in the '501 Application, provides a significantly higher throughput efficiency than prior random access schemes.

DEPR:
FIG. 7 is a diagram that illustrates the structure and timing of a plurality of random access request packets that can be transmitted by different mobile stations, in accordance with the preferred embodiment of the present invention. Although only three random access request packets are shown for illustrative purposes, the invention is not intended to be so limited and can include the transmission and reception of more than three such packets. Essentially, for each of the random access request packets shown (20, 22 and 24), the S-ALOHA procedure used with the present method applies only to the preamble portion of the random access request process. The length of each preamble (20, 22 and 24) is set equal to the width of the time slots (n, n+1 . . . , n+i), minus (for design purposes) a predefined guard time to minimize potential interference between slots. For example, in practice, a one symbol guard time can be used. Also, as shown, the lengths of the data field portions of the random access request packets (20, 22

lengths of the data field portions of the random access request packets (20, 22 and 24) can be varied according to the desired application, which provides mobiles with flexibility in transmitting different length data fields.

WEST

Generate Collection

L5: Entry 13 of 29 File: USPT Feb 22, 2000

DOCUMENT-IDENTIFIER: US 6028851 A
TITLE: System and method for mobile assisted admission control

ABPL:
A system for inhibiting the transmission of an access request message from a mobile station when either the system is incapable of granting access at the class of service desired by the mobile or access by the mobile at that class of service would increase the interference level of the target base station or a neighboring base station past its interference capacity. In one embodiment, each base station broadcasts a maximum data rate access parameter and any mobile receiving that parameter and seeking access at a greater data rate refrains from transmitting an access request message. In another embodiment, each mobile calculates from its path loss to the base station the power level it must transmit in order to gain access as well as the effect of that transmission on the interference level of both the target base station and neighboring base stations. If transmission at the required power level would increase the interference level of any base station past its maximum capacity, the transmission is inhibited. The system is most effective in CDMA mobile cellular radio systems.

BSPR:
Two main techniques of modulation have been used in cellular radio telecommunication systems: analog and digital. Among the former, frequency division multiple access (FDMA) has historically been the most common way in which multiple call connections are handled between many mobiles and a single base station. In FDMA, the available radio frequency spectrum is divided into a plurality of channels. A separate and distinct frequency channel is assigned to each mobile station and that channel is occupied continuously throughout the length of its connection to that base station. More recently, digital modulation techniques have been introduced to increase the efficiency of spectrum utilization in cellular systems. The principal digital modulation methods employed are time division multiple access (TDMA) and code division multiple access (CDMA). In the TDMA technique different ones of the mobile stations are allocated a separate short time slot in a periodically repeating frame of information during which they transmit bursts of digitized data containing both speech and control information. Thus, several separate mobile stations time-share a single frequency channel previously occupied by a single mobile station and thereby increase the efficiency with which the available radio frequency spectrum is used. In the CDMA technique the speech and information signals from a plurality of mobile stations are each separately encoded with a different spread-spectrum pseudo-noise (PN) chip code that distinguishes its signal from that of the other mobiles. All of the PN encoded signals are then transmitted through spread-spectrum transmission over the same relatively broad frequency band. While all of the PN encoded signals overlap each other in both time and frequency they are decoded by correlation with the PN code associated with the desired speech/information signal of a particular mobile station.

BSPR:
The power regulation problem associated with mobile stations is greatly exasperated in the case of CDMA systems where a mobile station receiving with twice the power of another mobile station occupies twice the system capacity of that station (assuming the mobile stations have the same perceived path loss). In addition, a mobile station transmitting at a higher data rate than another mobile station also occupies a greater portion of the system resources than that mobile station. While regulation of the power with which mobile stations transmit in general is extremely important in CDMA systems, the regulation of power with which a mobile station seeks initial access to a base station is especially critical.

BSPR:
If access is never granted by the base station, e.g., due to lack of system capacity or necessary hardware resources, a mobile will increase its power level to its maximum before it gives up. Thereafter it may recycle and start the process over again. If many mobile stations are futility seeking access to the system and each mobile is transmitting an access request message at increasingly higher power levels, this can result in serious degradation of system resources, especially in CDMA systems.

DEPR:
In cellular mobile telecommunication systems there is a limited amount of system capacity available within each cell. For example, in a CDMA cellular radio telecommunication system, each base station has a finite capacity of total received in-band power (the sum total of power being received at the base station from each of the mobiles with which the base station is in communication plus the power received at the base station from mobiles being served by base stations in adjacent cells) with which it can cope and still receive signals from mobiles located on the outer periphery of its cell. Each mobile station contributes to the overall interference level within the cell by a value proportional to the power with which that mobile station is transmitting a signal to the base station as well as the data rate with which its signal is transmitted. Because the attenuation of a signal traveling through the atmosphere from a transmitter to a receiver is a function of the fourth power of the distance between the two, receivers farther from a base station must transmit at a significantly higher power than those nearer the base station in order to be received at the base station at a given signal quality.

DEPR:
Referring to FIG. 1, there is shown a graph indicating a traditional closed loop power control method of accessing a base station by a mobile station in a cellular system. At t.sub.0 the mobile station begins transmitting an access request signal toward the base station at an initial power P.sub.0. If an access acknowledgment from the base station is not received by the mobile station it continues increasing the power until time t.sub.1 at which a power level P.sub.1 has been reached and at which time the base station detects the signal containing the access request message from the mobile station, runs its access control algorithm and determines that access to the requesting mobile should be allowed. However, by the time the base station can process the access request from the mobile station and reply back to it that the access request has been received and granted, the mobile station has continued to increase the power until at t.sub.2 its power has reached a relatively larger value of P.sub.2. Thereafter, the base station instructs the mobile station to decrease its power level to value P.sub.3, which is the minimum value necessary to maintain a desired level of communication quality between the mobile station and base station. The time period between t.sub.1 and t.sub.2 results in a large additional increment of unnecessary power .DELTA.P being injected into the cell by the mobile station. This additional power injection consumes valuable system resources and results in significant degradation of the quality of service which the base station can render to all the other mobiles in the system.

DEPR:
It should be understood that there are other techniques by which a mobile station seeks access to the system other than the power ramping procedure described above in connection with FIG. 1. For example, the slotted Aloha method is one whereby a mobile station transmits an initial access request message at a relatively high power and then retransmits it if an acknowledgment from the base station is not received. In either case, the power injected into the system by the mobile consumes valuable system resources.

CLPR:
4. The method as set forth in claim 1 wherein the digital radio telecommunication system is a CDMA system.

CLPR:
8. The system as set forth in claim 5 wherein the digital radio telecommunication system is a CDMA system.

CLPR:
12. A method as set forth in claim 9 wherein said cellular radio communication

system is a CDMA system.

CLPR:
16. A method as set forth in claim 13 wherein said cellular radio communication system is a CDMA system.

WEST

Generate Collection

L5: Entry 20 of 29 File: USPT Apr 15, 1997

DOCUMENT-IDENTIFIER: US 5621723 A
TITLE: Power control in a CDMA network

ABPL:
A means of power control on the reverse link of a CDMA network is disclosed. Specifically, the forward link from the base station to the subscriber unit is used to direct the subscriber unit to modify the output power radiated. The forward link consists of the forward packet data channel and the forward channel control channel. The forward packet data channel carriers the informational data to the subscriber unit, and the forward packet control channel includes carries of a power control setting. The forward channel is bi-phase modulated with the forward packet data channel transmitted in-phase and the forward packet control channel transmitted in quadrature.

BSPR:
The present invention relates to CDMA-based radio networks and, more particularly, to packet-switched data services.

BSPR:
IS-95 based CDMA currently has very limited packet-switched data capabilities as disclosed in TIA/EIA/IS-95 Interim Standard, Mobile Station-Base Station compatibility Standard for Dual Mode Wideband Spread Spectrum Cellular Systems, July, 1993 (herein incorporated by reference). The primary limitation is imposed by the reverse link. On the forward link, the paging channel can be used to accommodate outbound traffic, although the maximum data rate imposed is currently restricted to 9600 bps. On the reverse link, two mechanisms exist which can be used to facilitate in-bound traffic. Short messages (i.e. 110 bytes or less) can be accommodated by using the access channel. The peak data rate supported on the access channel is 4800 bps. The random access protocol employed is highly inefficient, yielding data throughputs significantly less than 4800 bps. For longer messages, negotiation of a dedicated traffic channel is required. While the traffic channel is capable of supporting 9600 bps sustained, the set-up times can be prohibitively long for short messages (e.g. 800 msec).

BSPR:
Associated with each paging channel are 32 reverse link access channels. Access channels are chosen at random by users and are delineated by non-orthogonal codes. The codes within a sector are a function of the sector pilot code, paging channel code and the access channel chosen. The random access protocol employed is based on slotted ALOHA, with the slot size being a system configurable parameter. The parameters governing the protocol permit additional randomization of packets through time offsets to further reduce the possibility of collisions. All packets employ a minimum of 20 msec of un-modulation preamble to allow for acquisition by the base station. The access channel data rate is fixed at 4800 bps, with 64-ary orthogonal modulation being employed.

BSPR:
While using the access channel, mobiles are required to monitor the corresponding paging channel for system status messages as well as messages addressed to specific mobiles. There are not explicit feedback mechanisms employed at the physical layer such as power control, channel busy/idle status and system load. The lack of timely feedback information severely limits the throughput and capacity of a packet data service.

BSPR:
In accordance with the invention, a method if a packet-switched CDMA network for communicating between a base site and a mobile site comprises the steps of: transmitting signaling traffic from the mobile site to the base site; acquiring the transmitted signalling traffic at the base site and responsively

communicating power control data to the mobile site; and receiving and interpreting said power control data at the mobile site and adjusting the transmission of said signaling traffic in accordance with said interpreted power control data.

DEPR:
Continuous transmission is employed over the duration of a packet as described in R. Walton, "Use of Repeat Coding for PCS CDMA Reverse Link Traffic Channel Operation", JTC(AIR)/94.04.28-297, March 1994, herein incorporated by reference. Data rate may be changed during the packet only if commanded by the base station. Variable packet durations are supported and are expressed in units of frames (i.e. multiples of 20 msec intervals). Interleaving and coding shall follow the recommendations set forth in R. Walton, "Proposed Repeat Coding Mode Functionality for PCS CDMA Reverse Link Traffic Channel Operation", JTC(AIR)/94.06.13-415, June 1994, herein incorporated by reference. Extension to rates in excess of 14.4 kbps is possible using the extended CDMA PCS system modulation parameters for the reverse traffic channel defined in Qualcomm, Inc. and Motorola, Inc. "The CDMA PCS System Common Air Interface Proposal". JTC(AIR)/93.11.01-404, Nov. 1, 1993, and Qualcomm, Inc. "Proposed CDMA PCS Standard", JTC(AIR)/94.01.19-22R1, Apr. 28, 1994, both herein incorporated by reference. The maximum packet duration shall be a system configuration parameter. This duration may be related to the window size employed in the RLP that is used to perform the ARQ functions.

DEPR:
By using dedicated channel codes assigned to specific data rates, the reverse packet data channel receivers to not have to estimate the channel data rate. This greatly simplifies the processing requirements of the receiver. Since the cell site knows both the slot timing and data rate of arriving packets on a given reverse packet data channel, the number of hypotheses that require examination in a given interval can be made to match the processing capabilities of the cell site hardware. In addition, the imposed channel structure facilitates rapid detection of packets and enables closed loop power control to be established quickly. Since the detection threshold is fixed for a given data rate, the closed loop power control can be enabled as soon as the detection threshold is exceeded. This allows short preambles to be employed, thereby increasing the reverse packet data channel efficiency. Further, the status of the acquisition can be conveyed to the mobile quickly, allowing mobiles to exit the channel rapidly if acquisition fails.

DEPR:
In conjunction with the forward packet data channel, a forward packet data control channel is also used. Mobiles are required to monitor both the forward packet data channel and the forward packet data control channel simultaneously. The forward packet data control channel is used to convey timely information to mobiles. This information consists of, as a minimum, reverse packet data channel status (i.e. busy/idle) and closed loop power control bits for all mobiles actively transmitting on the associated set of reverse packet data channels.

DEPR:
Several potential implementations that facilitate the forward packet data control channel exist. The simplest implementation is to use the same scheme that is currently used on a forward traffic channel. That is, the forward packet data channel may be punctured with the power control information for a single transmitting mobile. The problem with this approach is that only one or two reverse packet data channels can be supported by the forward packet data channel without significantly compromising performance. Given the asymmetric traffic demands placed on the network by packet data services, it is desirable to use a scheme which permits multiple reverse packet data channels to be supported simultaneously by a single forward packet data control channel.

DEPR:
As an illustration, assume that the forward packet data channel is operating at 9600 bps. Further assume that 6 forward power control subchannels are supported and the remaining capacity is used to convey reverse packet data channel status. Dividing the 20 msec frame into 16 PCG slots gives a total of 12 control bits/PCG slot. Each of the 6 power control subchannels is then assigned one of the available bits within the PCG slot. The assignment is fixed and known to all mobiles monitoring the forward packet data/control channels. Mobiles not

transmitting simply ignore the power control subchannels. When a mobile is transmitting, the power control subchannel assigned is used to drive the mobile transmit power. FIG. 1 illustrates the procedure when such a forward packet data control channel is operational.

DEPR:
In a CDMA packet data network, the necessity for soft handoff is questionable since the RLP is designed to efficiently recover from error events. Depending upon the frequency and statistical characterization of error events, soft handoff may improve network efficiency and throughput. The economic and performance tradeoffs associated with providing this capability for packet data traffic are not entirely clear. The cost of providing this capability may be prohibitive for some operators and/or certain mobiles designed specifically for a given application. Nevertheless, we present a proposed scheme which could be adopted if desired.

DEPR:
Control channel information (i.e. status and power control) is derived independently at each base station and is transmitted to the mobiles in the same way as is done for mobiles not in handoff. That is, no coordination is required on the part of the base station for transmission of control information to mobiles in soft handoff. The mobile must be capable of demodulating up to three control subchannels independently as is currently done for power control bits. The rules governing interpretation of the power control bits remain the same, i.e., the mobile decreases it's transmit power if any cell requests this. The decision as to whether the channel is available is made on a similar basis. That is, the channel is assumed to be busy if any cell indicates a busy status. Further, acquisition is assumed if any cell indicates this by setting the appropriate status bits busy. The power control bits should indicate power up in the channel idle status to prevent disabling of acquired mobiles in handoff with adjacent cells.

DEPR:
What has been shown and decided herein are methodologies for improving CDMA packet data service. The scheme employs closed loop power control for reverse link traffic and does not involve traffic channel set-up. In addition, the scheme supports multiple data rates and allows for a multitude of channel structures to be defined, depending upon the network traffic requirements. Further, in order to maximize the channel throughput, the scheme takes advantage of load fluctuations within the network, thereby allowing higher data rates to be accommodated in an adaptive manner. Finally, the concepts of soft handoff are extended to provide the packet data users with additional macro diversity which serves to increase network efficiency.

CLPR:
1. A method of communicating forward packet data and forward packet data control information over a forward link in a packet-switched CDMA network, comprising the steps of: